

DOCUMENT CONTROL PROCESSING FORM

File Number:	DESN0774 Item No. 01		
Document Date:	08/24/20		
Document Type:	Forms: DQA Form, RCSR form, WSDOT Concurrence		
DCPF Author:	Kevin W.		
Subject:	Final: As-Built Hydraulic Report		
To (Company):	WSDOT	To (Individual):	PARSHOTAM AJUDIA
From (Company):	Jacobs	From (Individual):	Eric Crowe
Additional Subject Information and/or Keywords		Schedule Activity:	N/A
		Yes	No
Distribution:	Attachments	<input type="checkbox"/>	<input type="checkbox"/>
Drainage Distribution	Notes:		

Design Quality Audit Checklist

DESIGN PACKAGE/SUBMITTAL NAME: Final As-Built Hydraulic Report			
DISCIPLINE: Drainage	AUDIT DATE(S): 08/24/2020		
AUDIT ITEM(S): Final As-Built Hydraulic Report dated August 2020; As-Built Hydraulic Report Checkprint; RCSR form; WSDOT concurrence email	CONFORMS		
AUDITOR: <u>Marinus R. Voskuilen</u>	YES	NO	N/A
1. Calculations:			
a) Have both original documents and check prints been provided for audit?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Are procedures for marking-up check prints being followed (R-Y-G)? (Red/Yellow – Checker, Green – Backchecker/Checker, Yellow – Verifier)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Are the check prints appropriately signed-off and dated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Have Checker comments been incorporated/addressed/resolved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Did the checker sign-off and date the original documents?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Computer Calculations:			
a) Have computer programs been approved/ verified? – Programs Used: Stormshed 3G, MGS Flood Version 4.40, WSDOT Inlet Spacing Spreadsheet, WSDOT Sag Inlet Worksheet, Ditch Capacity and Stability Spreadsheet, MGS Flood for CABS WQ Flow, Trapezoidal Bioswale Spreadsheet, and WWHM.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Has computer input been checked?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) For non-verified spreadsheets, has input and output been checked?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Are the check prints appropriately signed-off and dated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Have Checker comments been incorporated/addressed/resolved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Drawings/Plan Sheets:			
a) Have Inter-Discipline Design Check (IDC) reviews been performed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
– Have Reviewer comments been incorporated or addressed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
– Did each Reviewer sign-off and date the review print?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have both original documents and check prints been provided for audit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Are procedures for marking-up check prints being followed (R-Y-G)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Are the check prints appropriately signed-off and dated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have Checker comments been incorporated/addressed/resolved?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Has the WSDOT spreadsheet for CADD conformance (symbolology, naming) been provided?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Specifications:			
a) Have both original documents and check prints been provided for audit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Are procedures for marking-up check prints being followed (R-Y-G)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Are the check prints appropriately signed-off and dated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have Checker comments been incorporated/addressed/resolved?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Other Design Documents (Reports, Deviations, etc):			
a) Have both original documents and check prints been provided for audit?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Are procedures for marking-up check prints being followed (R-Y-G)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Are the check prints appropriately signed-off and dated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Have Checker comments been incorporated/addressed/resolved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Reviews:			
Were scheduled design reviews completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
– Do review comments have an agreed upon action code?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
– Are the review comments incorporated/addressed/resolved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
– Have corrections been verified (signed-off) on Form RCSR?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. The signature below certifies the requirements of Section 4.5 (Design QA Audits and Certification) of the QMP have been fulfilled.			
DQAM _____ Date _____			
8. This Section to be Completed for RFC Packages Only. The signature below certifies that the documents included in this submittal are in compliance with the requirements to be Released For Construction.			
DQAM <u>Marinus R. Voskuilen</u> Date <u>08/24/2020</u>			
Comments/Notes: 1. WSDOT concurrence email provided.			

**I-405 / SR 167 Interchange Direct Connector Design Build Project
Review Comment Summary and Resolution Form**

Package Description: DESN0763 Final: As-Built Hydraulic Report							Submittal Date: 2/11/2020	
Reviewer: Alan Black/WSDOT GEC/Hydraulics (ADB), Tanya Lee/WSDOT GEC/Hydraulics (T.Lee) (Name/Title/Organization)							3/11/2020	
Comment		Sheet No. *	Review Comment	Initial Code **	Response	Response By	Final Code ***	Correction Verified by
No.	By							
Code: A=Accept Comment; B=Review and Discuss Comment; C=Evaluated but Not Incorporated; D=Comment Beyond Scope or Beyond Design Phase								
Note: * Indicates Sheet No., Page No. and Line No. or "G" for General Comment; ** Filled out by Design; *** Agreed Resolution (code "B" is not acceptable)								
1	ADB	Gen.	RFP Section 2.14.6.5 notes the following, "Before the As-Built Hydraulic Report will be accepted, the Drainage Design Lead Engineer and the Water Resources Engineer shall field verify as-built conditions for their respective areas of responsibility. The Design-Builder shall provide an opportunity for WSDOT to field check and verify the As-Built Hydraulic Report." This field check meeting has not be scheduled presumably pending the fixes noted below: WSDOT conducted preliminary site visits and found that the as-built report documentation of runoff treatment could not be verified. My finding is that the project treats 3.69 acres of runoff treatment rather than 20.88 as documented in the as-built report.	A	A field investigation was performed on 7/21/20. The investigation noted the following items that need to be addressed: The Renton Village CABS (DR12-28) does not appear to be built per plan. The BMP marker guide posts have not been installed. The pond at the Holmes Electric site is still full of water. Since this site visit the Renton Village CABS has been repaired and the Holmes Electric pond has been drained and the control structure cleaned. The BMP marker guide posts are currently on back-order and will be installed when they become available.	JDZ	A	TPH
2	ADB	CABS S2.2	DR10-07 installation - 8.19 acres not treated - Site visit found that as-built condition is not a CABS BMP. Level flow splitter undermined by water flows - not functioning Channelized flow throughout - bypassing treatment as sheet flow through grass. Zero compost thickness after erosion in the middle and less compost thickness along south side of eroded channel. Erosion favoring the south side implies that the level spreader is not level. Discharge turbidity above acceptable limit. 15' design bottom width needs to be verified. Compost washed downstream into WSDOT and City drainage systems - suggest inspection and cleaning downstream.	A	The CABS has been rebuilt per plan.	JDZ	A	TPH
3	ADB	CABS S1.1	DR10A-5 installation - 4.99 acres not treated. - No grass. Full 6' design width of the flat bottom not provided. Compost thickness needs to be verified per HRM requirements.	A	The CABS has been rebuilt per plan.	JDZ	A	TPH

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Comment		Sheet No.	Review Comment	Initial Code	Response	Response By	Final Code	Correction Verified by
No.	By	*		**			***	
4	ADB	Detention Pond S1.1	Pond is not draining properly and has filled with water creating an attraction to birds, compromising WSDOT compliance with FAA regulations, and lost detention volume. The pond no longer meets the design intent of no standing water within 10,000 of the airport. Verify that the control structure was not plugged during construction activities.	A	The contractor has opened the shear gate to drain the pond. The contractor will clean the control structure of sediment.	JDZ	A	TPH
5	ADB	CABS S2.3	DR12-28 installation - 4.01 acres not treated - Channelized flow throughout - bypassing treatment as sheet flow through grass. Uncertain compost thickness after erosion No grass in lower section. Full 5' design width of the flat bottom not provided. The ruts appear to have been recently (3/11/20) filled with dirt rather than compost.	A	The CABS has been rebuilt per plan.	JDZ	A	TPH
6	ADB	p.2	Signature Sheet - The statement notes that this design "reflects the final designed conditions for the project". After construction deficiencies are addressed, this statement should reference the as-built condition.	A	The statement has been revised to reference the as-built condition.	JDZ	A	TPH
7	ADB	Gen.	Resolve whether the CABS treatment will be reconstructed per design or replaced by BMPs that are constructible. Update the report to reflect as-built runoff treatment area and BMPs provided.	A	The CABS has been rebuilt per plan.	JDZ	A	TPH

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Comment		Sheet No. *	Review Comment	Initial Code **	Response	Response By	Final Code ***	Correction Verified by
No.	By							
8	ADB	Gen.	RFP Section 2.14.4.7 states the following, "CABS BMP's shall be constructed in accordance with the RFC plan, with particular attention to the as-built flat bottom width of the finished surface (top of compost) and thickness of compost. The construction inspection shall include the documentation of the bottom width taken at 50-foot intervals along the length of the installation. The depth of compost as-built shall be measured at the middle point and at each edge of the flat bottom area on 50-foot intervals along the length of the installation to demonstrate that a minimum of a 3-inch thickness has been achieved. The Design-Builder shall ensure that the BMP performance retains the design sheet flow widths for the duration of the warrantee period. Repair all tracking and rutting once compost has been placed. If runoff is allowed to flow in the BMP prior to grass establishment, the Design Builder shall install temporary erosion control measures to prevent erosion of the compost layer." Please provide documentation showing that the repairs to CABS S1.1, S2.2, and S2.3 comply with these requirements.	A	The CABS has been rebuilt per plan.	JDZ	A	TPH
9	T.Lee	A-2	Show flow path with arrows to indicate the individual discharge location within each TDAs on the TDA summary plans.	A	Flow arrows have been added (in progress).	JDZ	A	TPH
10	T.Lee	Pg.44, Pg. 65	Are S2 New Impervious acreages on Pg 44 and Pg. 65 supposed to be the same? On Pg. 65, 247,397 sq.ft. is 5.679 ac	A	Table 4.0 in Section 4.0 has been corrected. Total S2 new impervious is 5.68 ac.	JDZ	A	TPH
11	T.Lee	Pg 47	On Page 46 Section 4.1.2 TDA S2.2 Flow Control, the last row states that the total contributing area is 11.43 acre. The pass through is 1.421 (grass) and 2.464 (impervious). Are they supposed to match to numbers on the TDA S2 Flow Control Pond S2.2 Exhibit? The MGSFlood Input Sheet matches to the exhibit's numbers	A	The paragraph has been revised to match the Pond S2.2 exhibit.	JDZ	A	TPH

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Comment		Sheet No.	Review Comment	Initial Code	Response	Response By	Final Code	Correction Verified by
No.	By	*		**			***	
12	T.Lee	Pg. 48	On Page 47 Section 4.1.2 TDA S2.3 Flow Control, it states that the total contributing area is 4.514 acre. The pass through is 0.134 (grass) and 0.585 (impervious). Are they supposed to match to numbers on the TDA S2 Flow Control Pond S2.3 Exhibit?	A	The paragraph has been revised to match the Pond S2.3 exhibit.	JDZ	A	TPH
13	T.Lee	Pg 114	Is "Offsite" supposed to be "S1"?	A	Yes, the table has been corrected.	JDZ	A	TPH
14	T.Lee	Pg 113	Retrofit is 10.26 Ac in the Target table and 10.27 Ac on the DB Retrofit Area table. Shall they be the same? Is TDA S3 in Net DB WQ Area be 0.01Ac and bring the total to be 15.91Ac?	C	The retrofit target is 10.26 ac. The actual retrofit provided is 10.27 ac. The project is providing 0.01 ac more retrofit than required.	JDZ	C	TPH
15	ADB	DD12	Pending field verification - not verifiable by Google Maps yet.	A	Field verification was performed on 7/21/20.	JDZ	A	TPH

Jeff Zigweid

From: Black, Alan (Consultant) <BlackAl@consultant.wsdot.wa.gov>
Sent: Monday, August 24, 2020 11:55 AM
To: Jeff Zigweid
Cc: Jon Turcott; Scott Mesic; Russell, Elizabeth (Consultant)
Subject: RE: [EXTERNAL] RE: Renton Village CABS

Jeff,
Yes, my comments have been addressed. Please be sure to stamp and sign the report.
We also need the submittal of the electronic files (CADD, Word, Excel, MGSFlood, HECRAS, WWHM, Stormshed, etc.) to close this out.

Thanks for getting this completed! I look forward to working with you on the next one.

Alan

Alan D. Black, PE, CPSWQ, CPESC
Hydraulics Engineer

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Bellevue, WA 98004

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From: Jeff Zigweid <JeffZ@paceengrs.com>
Sent: Thursday, August 06, 2020 2:08 PM
To: Black, Alan (Consultant) <BlackAl@consultant.wsdot.wa.gov>; Russell, Elizabeth (Consultant) <RusselE@consultant.wsdot.wa.gov>
Cc: Jon Turcott <JonT@paceengrs.com>; Scott Mesic <ScottM@paceengrs.com>
Subject: [EXTERNAL] RE: Renton Village CABS

WARNING: This email originated from outside of WSDOT. Please use caution with links and attachments.

Attached is the comment response form.



Jeff Zigweid, PE | Senior Project Manager
1724 W. Marine View Drive | Suite 140 | Everett, WA 98201
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www.paceengrs.com

Celebrating 25 Years | Reliable. Responsive. Engineering Solutions.

From: Jeff Zigweid <JeffZ@paceengrs.com>
Sent: Thursday, August 06, 2020 2:05 PM
To: Black, Alan (Consultant) <blackal@consultant.wsdot.wa.gov>; Russell, Elizabeth (Consultant) <RusselE@consultant.wsdot.wa.gov>
Cc: Jon Turcott <JonT@paceengrs.com>; Scott Mesic <ScottM@paceengrs.com>
Subject: Renton Village CABS

Good afternoon Alan,

Atkinson has repaired the CABS at the Renton Village pond. See the images below. They BMP marker guide posts are on back order and will be installed when they are available. They've also opened the shear gate at the Holmes Electric pond and drained the water out. Stuart with Atkinson informed me that they did not find a plug but that the control structure is full of sediment. They're going to pump it out and clean it.

I've uploaded the updated As-Built Hydraulic Report to dropbox at the link below. Aside from those last two items that still need to be addressed, can you please provide concurrence that we've addressed the remaining comments? Are we close enough that we can formally resubmit the report?

<https://www.dropbox.com/s/fbi5yu94yx922i4/Final%20Direct%20Connector%20As-Built%20Hydraulic%20Report.pdf?dl=0>

Thanks,



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